

10/530633  
S03P1151  
16/ PRTS JC13 Rec'd PCT/PTO 07 APR 2005  
Art 34 Amdt.

## DESCRIPTION

### LIQUID EJECTING HEAD AND LIQUID EJECTING DEVICE

#### Technical Field

The present invention relates to a liquid ejecting head for ejection of liquid by means of heat energy, which is employed for liquid ejecting apparatus such as inkjet printers, and also to a liquid ejecting apparatus provided with the liquid ejecting head.

#### Background Art

Among conventional liquid ejecting apparatus such as inkjet printers is that of thermal type which is designed to eject liquid by means of a pressure of bubbles evolved by rapid heating of liquid with a heating element.

The heating element may assume different forms. It may be a single entity or an assemblage of two or more parts placed in one liquid chamber. (See Patent Document 1 (Japanese Patent Laid-open No. Hei 8-118641).)

Conventional heating elements may take on rectangular shapes as shown in Figs. 13A to 13C which are plan views. The one shown in Fig. 13A consists of a

on the heat energy ejecting element through the nozzle, and a secondary control means which causes at least the two major parts to evolve heat energy differing in heat energy characteristics and to change the distribution of heat energy imparted to the liquid on the heat energy evolving element, thereby controlling the direction of ejection of the liquid ejected from the nozzle.

According to the present invention, the heat energy evolving elements are divided into at least two main parts to evolve heat energy to eject liquid by the conductor which is formed at the turnaround part of the zigzag pattern. In other words, those parts adjacent to each other, with the turnaround part between, substantially function as the heat evolving parts which evolve heat energy to eject liquid. Because of this structure, the heating elements function as if the main parts are connected in series through the conductor.

The primary control means controls ejection of liquid, and the secondary control means causes the heat energy evolved by the main parts to vary in heat energy characteristics. In this way it is possible to change the distribution of heat energy on the heat evolving elements and to control the direction of ejection of liquid ejected from the nozzle.